
SECTION II: Fuels, Energy Resources and Technologies¹

2.1 Please indicate which of following Eligible New Renewable Fuels, energy resources and technologies are used by the Generation Unit: (Check ALL that apply)

- ☐ Solar photovoltaic
- ☐ Solar thermal electric energy
- ☐ Wind energy
- ☐ Ocean thermal, wave or tidal energy [indicate which]
- ☐ Fuel cells using an Eligible New Renewable Fuel
- ☐ Landfill methane gas
- ☐ Anaerobic digester gas
- ☒ Biomass, using low-emission, advanced biomass power conversion technology

2.2 If you checked Biomass in section 2.1 above, please provide the following:

- A. Attach a copy of the Generation Unit's Valid Air Permit or equivalent authorization. ~~If the NO_x and PM limits in the Permit are higher than the applicable limits in the Guideline on the RPS Eligibility of Biomass Generation Units (Guideline), then provide an attachment detailing your plans to meet the limits set forth in the Guideline.~~
- B. Effective date of Valid Air Permit or equivalent authorization:
01 / 15 / 08. If the Unit does not yet have a Permit, describe in an attachment your plans and timetable for obtaining one.
- C. State or jurisdiction issuing Valid Air Permit or equivalent authorization:
COMMONWEALTH OF MASSACHUSETTS
- D. Specify the fuel or fuels used in the Unit SEE ATTACHED COMMENTS

NOTE: If the Unit will co-fire an Eligible Biomass Fuel with an ineligible fuel (the latter including all fossil fuels), or if the Unit will use a liquid fuel that includes both an eligible biofuel and a fossil fuel (such as a biodiesel blend), you must complete and attach Appendix B and include all required attachments, including a Fuel Supply Plan.

- E. Please attach technical details sufficient to demonstrate to the Division that the Unit uses an "advanced biomass power conversion technology."

SECTION III: Commercial Operation Date

3.1 Commercial Operation Date: 06 / 30 / 09.

If the date is earlier than January 1, 1998, then please complete and attach Appendix A to request a Vintage Waiver under 225 CMR 14.05(2).

¹ As described in 225 CMR 14.05(1)(a) and any current, relevant, RPS Guidelines.

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225 CMR 14.00

Additional Comments to SOQ Application:

2.2 B. Estimated issuance of Valid Air Permit – January 15, 2008.

DEP has issued a Proposed Conditional Approval and Amended Emission Control Plan (ECP) Draft Approval for the Somerset Project, completed a public comment review period, and conducted a Public Hearing. The public comment period ended and the public hearing was conducted on October 1, 2007. Subsequent to the conclusion of the public review period, CLF filed two petitions to the MEPA office requesting the Somerset Project undergo MEPA review. Somerset has responded to data request from MEPA on those petitions. DEP Agency Action to issue the Conditional Approval and Amended ECP is on hold pending decision on MEPA review which is expected on or before December 30, 2007.

2.2 D. Somerset Unit 6/Boiler No. 8 will be co-fired with syngas (derived from up to 35% solid biomass on an annual basis) and up to 10% liquid biofuels in accordance with the attached Somerset Feedstock and Fuel Supply Plan.

The Somerset Feedstock and Fuel Supply Plan conforms to the RPS definition of Eligible Biomass Fuel: brush, stumps, lumber ends and trimmings, wood pallets, bark, wood chips, shavings, slash and other clean wood that are not mixed with other solid wastes; agricultural waste, food material and vegetative material as those terms are defined, or may subsequently be defined, by the Department of Environmental Protection at 310 CMR 16.02; energy crops; biogas; organic refuse-derived fuel that is collected and managed separately from municipal solid waste; or neat biodiesel and other neat liquid fuels that are derived from such fuel sources.

2.2 E. “Description of the Project” and process flow diagram providing technical details of the project and technology demonstrating the use of “advanced biomass conversion technology” are included in electronic format.

3.2 Somerset Unit 6 is proposed to be converted to allow partial use of biomass.

Appendix B additional information

Note: the Appendix B Co-Firing with Ineligible Fuels Waiver form submitted is the draft form provided by Mr. Howard Bernstein of DOER.

B.2 The anticipated Somerset Feedstock and Fuel Supply Plan (2 pages) is provided on the following pages. It includes:

B.2 (a) a listing of each feedstock / fuel;

B.2 (b) the likely proportion of each feedstock / fuel; and

B.2 (c) the likely net heat content of each feedstock / fuel source.

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B.3 The anticipated New Renewable Generation attributable to the Eligible Renewable Fuels is provided on the Somerset Power Fuel Supply and Generation Plan. Overall renewable generation is not expected to vary significantly over the course of the year, although the exact renewable feedstock / fuel mix may vary.

B.3 (a) See attached Somerset Fuel Supply and Generation Plan

B.3 (b) Somerset Power will maintain feedstock and fuel receiving procedures to measure and record the following:

- Quantity of biomass feedstock received in tons (all trucks will be weighed before and after unloading biomass)
- Heat content of delivered biomass feedstock will be measured / calculated (samples from each biomass truck will be collected and analyzed on a periodic basis) to determine the average stockpile heat content on a first in first out basis.
- Coal and coke heat content will be measured for each shipment. The average coal and coke stockpile heat content will be calculated on a last in first out basis.
- Liquid fuel, both biodiesel and No. 6 oil will be supplied with a heat content analysis. The average heat content and amount of biodiesel blend (if any) will be calculated for liquid fuel storage volumes.
- All feedstock flow to the gasifiers will be measured to determine quantity delivered on a daily basis. Net heat content for a) Eligible Renewable Biomass / Fuels, b) other biomass, c) coal / coke, or d) No 6 oil will be determined on a monthly basis. The net heat content will be used to calculate the net New Renewable Generation attributable to the Eligible Renewable Fuels and reported to NEPOOL GIS on a monthly basis in accordance with 225 CMR 14.05(3).

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Somerset Feedstock and Fuel Supply Plan

Feedstock (fed to gasifier)

Eligible Renewable Solid Biomass

1. Forest Residue – tops, branches, stumps, slash, forest thinning
2. Pulpwood – harvested tree chips
3. Urban Wood Residue – land clearing residue (e.g. tree chips, branches, tops, logs, stumps, brush, bark, and mixed wood), tree trimmings
4. Manufacturing Residue – bark, sawdust, tailings, woodchips, shavings
5. Roundwood – whole trees in long log form
6. Wood pallets
7. Energy crops – switchgrass, poplar, cane, corn stover

Other Solid Biomass

8. C&D Wood (“CDW”) – clean wood derived by both positive pick and negative pick from C&D waste; with DEP BUD if required
9. CDW Bulk – chipped C&D organic residue derived after separation and recycling of common non-organic materials (metals, rocks, road debris, plaster, masonry, aluminum, etc.); with DEP BUD (required)
10. Paper cubes – non-recycled paper derived fuel cubes (manufactured by IPP)

Solid ineligible Feedstock

11. Coal – generic domestic and international coal sources
12. Coke – metallurgical or foundry coke
13. Lime – a non heat producing fluxing agent

Boiler Fuels (co-fire in boiler with syngas)

Eligible Renewable Liquid Biomass

14. B100 Biodiesel – manufactured from vegetable oils, recycled cooking greases or oils, or animal fats
15. Biodiesel blends – blend of B100 and diesel fuel, qualified to the percent of B100 in the blend (typical blends include B99, B80, B20, B5)
16. Algal based Biodiesel (i.e. GreenFuel emission fed algae)

Liquid Fossil Fuels

17. Low Sulfur (0.3%) No. 6 oil

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Somerset Power - Fuel Supply and Generation Plan (Anticipated)
November 2007

			Expected Renewable Generation (monthly)				
Feedstock / fuel source	Eligible Biomass	heat content (btu/lb)	quantity (tph)	Heat Content		MWh	RECs (MWh)
				mmbtu/hr	%		
Gasifier Feedstock							
Forest residue	Yes	4,625	6	60	5%	4,093	4,093
Urban wood residue	Yes	4,625	25	230	18%	15,692	15,692
Pulpwood	Yes	4,625	-		0%	-	-
Round wood	Yes	4,625	7	65	5%	4,435	4,435
Pallets	Yes	6,125	6	70	5%	4,776	4,776
Mfgr residue	Yes	6,125	2	25	2%	1,706	1,706
Energy crops	Yes	4,500	-		0%	-	-
C&D wood (CDW)		6,125	-		0%	-	-
CDW bulk		6,000	-		0%	-	-
Paper cubes		9,000	-		0%	-	-
Coal / Coke		11,000	32	706	55%	48,166	-
Boiler Liquid Fuels							
B99	Partial	15,800	4	128	10%	8,733	8,645
B20	Partial	18,100	-		0%	-	-
LS No 6		18,659	-		0%	-	-
Total				1,284	100%	87,600	39,346